Amendments to the Claims:

This listing of the claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-14. **(canceled)**

15. **(currently amended)** An apparatus for tracking moving objects in time-series pictures, comprising:

a storage device for storing the time-series pictures and a program;

and a processor coupled to the storage device, wherein the program ~~make~~ makes the processor read and process the time-series pictures to track the moving objects in the pictures, and by the processing, each picture is divided into blocks, each block consisting of a plurality of pixels, in a case where an object-identification code of moving object is assigned in a unit of block, and a motion vector of moving object is determined in a unit of block, and wherein object-identification codes of a plurality of moving objects on a picture at a time t1 has been determined, the program ~~comprising~~ enables the processor to perform the ~~step~~ steps of:

determining each object-identification code and moving vector as approximate values of each of blocks on a picture at a time t2 on the basis of a first estimation function, and determining a value of a second estimation function using the approximate values;

determining each object-identification code and moving vector as a solution of each of the blocks on the basis of an approximately-optimum sum of the first

and second estimation functions, wherein the approximately-optimum sum is obtained

by changing the approximate values within a given range;

wherein the first estimation function has the sum of a sub-estimation

function for determining a moving vector by block matching between a current block on

the picture at the time t2 and a region on the picture at the time t1 and a sub-estimation

function for determining an object-identification code of the current block on the basis of

a count of pixels belonging to the same object-identification code within the region,

wherein the second estimation function includes respective absolute

values of differences between the motion vector MV between the current block and the

region and a motion vector of each of blocks around the current block, each of the

blocks having the same object-identification code as that of the current block, and takes

a more optimum value when the sum of the absolute values is smaller.

16.-43. **(canceled)**